

10/764,273

(FILE 'HOME' ENTERED AT 16:50:38 ON 13 MAY 2006)

FILE 'CAPLUS' ENTERED AT 16:50:47 ON 13 MAY 2006

=> s hafnium nitride thin film

40704 HAFNIUM
226542 NITRIDE
564035 THIN
942173 FILM

L1 7 HAFNIUM NITRIDE THIN FILM
(HAFNIUM(W) NITRIDE(W) THIN(W) FILM)

=> d 1-7 bib abs

L1 ANSWER 1 OF 7 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2006:375003 CAPLUS
TI Core Level Spectra of Hafnium and Hafnium Nitride (HfN0.9) by XPS
AU Arranz, A.; Palacio, C.
CS Departamento de Fisica Aplicada, Facultad de Ciencias, C-XII, Universidad
Autonoma de Madrid, Cantoblanco, Madrid, 28049, Spain
SO Surface Science Spectra (2004), 11(1), 33-42
CODEN: SSSPEN; ISSN: 1055-5269
PB American Institute of Physics
DT Journal
LA English
AB The principal core level XPS spectra of hafnium and hafnium nitride
(HfN0.9) samples are presented comparatively. The **hafnium
nitride thin film** has been grown by 3 keV
nitrogen implantation up to saturation of metallic hafnium.

L1 ANSWER 2 OF 7 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2006:251869 CAPLUS
TI Core level spectra of hafnium and hafnium nitride (HfN0.9) by XPS
AU Arranz, A.; Palacio, C.
CS Departamento de Fisica Aplicada, Facultad de Ciencias, Universidad
Autonoma de Madrid, Madrid, 28049, Spain
SO Surface Science Spectra (2006), Volume Date 2004, 11, 33-42
CODEN: SSSPEN; ISSN: 1055-5269
PB American Institute of Physics
DT Journal
LA English
AB The principal core level XPS spectra of hafnium and hafnium nitride
(HfN0.9) samples are presented comparatively. The **hafnium
nitride thin film** has been grown by 3 keV
nitrogen implantation up to saturation of metallic hafnium.

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 3 OF 7 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2004:739889 CAPLUS
DN 141:252518
TI Atomic layer deposited dielectric layers to fabricate increasingly smaller
integrated circuits
IN Ahn, Kie Y.; Forbes, Leonard
PA Micron Technology, Inc., USA
SO U.S. Pat. Appl. Publ., 23 pp.
CODEN: USXXCO
DT Patent
LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2004175882	A1	20040909	US 2003-379470	20030304
	WO 2004079796	A2	20040916	WO 2004-US6685	20040304
	WO 2004079796	A3	20050210		
	W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,			

LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI
RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE,
BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU,
MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA,
GN, GQ, GW, ML, MR, NE, SN, TD, TG

EP 1599899 A2 20051130 EP 2004-717434 20040304

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK

US 2006001151 A1 20060105 US 2005-213013 20050826

PRAI US 2003-379470 A 20030304

WO 2004-US6685 W 20040304

AB An atomic layer deposited dielec. layer and a method of fabricating such a dielec. layer produce a reliable dielec. layer having an equivalent oxide thickness thinner than attainable using SiO₂. Depositing a hafnium metal layer on a substrate surface by atomic layer deposition and depositing a hafnium oxide layer on the hafnium metal layer by atomic layer deposition form a hafnium oxide dielec. layer substantially free of silicon oxide. Dielec. layers containing atomic layer deposited hafnium oxide are thermodynamically stable such that the hafnium oxide will have minimal reactions with a silicon substrate or other structures during processing. The method of making a dielec. layer comprises forming a layer of hafnium on a substrate by atomic layer deposition; and forming a layer of hafnium oxide on the layer of hafnium by atomic layer deposition. The invention is suitable to fabricate increasingly smaller and more reliable integrated circuits (ICs) for use in products such as processor chips, mobile telephones, and memory devices such as dynamic random access memories (DRAMs).

L1 ANSWER 4 OF 7 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2004:594717 CAPLUS

DN 141:283416

TI Synthesis of hafnium nitride films by 0.5-5 keV nitrogen implantation of metallic Hf: an x-ray photoelectron spectroscopy and factor analysis study

AU Arranz, A.

CS epartamento de Fisica Aplicada, Facultad de Ciencias, Universidad Autonoma de Madrid, Madrid, 28049, Spain

SO Surface Science (2004), 563(1-3), 1-12

CODEN: SUSCAS; ISSN: 0039-6028

PB Elsevier B.V.

DT Journal

LA English

AB Hafnium nitride thin films have been grown by "in situ" nitrogen implantation of metallic hafnium at room temperature over the energy range of 0.5-5 keV. XPS and factor anal. (FA) have been used to characterize the chemical composition of the films. By means of FA of the Hf 4f and N 1s XPS core level peaks, comprising principal component anal. (PCA) and iterative target transformation factor anal. (ITTFA), the number and spectral shape of the different Hf-N phases formed during nitrogen implantation, as well as their concns., have been obtained without any prior assumptions. FA results show that the composition of the hafnium nitride films depends on both the ion fluence and ion energy, the formation of the superstoichiometric Hf₃N₄ phase being limited by the ion beam energy. For ion beam energies, Ep ≥ 2 keV, the hafnium nitride films formed are a mixture of metallic hafnium, a substoichiometric hafnium nitride that could be associated with the trigonal .vepsiln.-Hf₃N₂ and/or ξ-Hf₄N₃ phases, and the stoichiometric HfN phase. In addition, for Ep < 2 keV, the superstoichiometric Hf₃N₄ phase is also present in the films for higher ion doses. Comparison of the exptl. nitrogen concentration obtained by FA with that obtained from TRIDYN simulations suggests that in addition to nitrogen implantation and atomic mixing, other mechanisms like ion beam enhanced diffusion or the chemical reactivity of the Hf substrate towards nitrogen should be also taken into account.

RE.CNT 42 THERE ARE 42 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 5 OF 7 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2000:441721 CAPLUS

DN 133:77936

TI Glazed panel with thermally stable multilayer antireflective coating

IN Aomine, Nobutaka; Decroupet, Daniel; Ebisawa, Junichi; Noda, Kazuyoshi;
Takeda, Satoshi
PA Glaverbel, Belg.
SO PCT Int. Appl., 26 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000037382	A1	20000629	WO 1999-EP10075	19991215
	W: AL, AM, AT, AZ, BA, BG, BY, CH, CZ, DE, DK, EE, ES, FI, GB, GE, HR, HU, IS, KG, KZ, LT, LU, LV, MD, MK, NO, PL, PT, RO, RU, SE, SI, SK, TJ, TM, TR, UA, UZ, YU				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	EP 1150928	A1	20011107	EP 1999-964597	19991215
	EP 1150928	B1	20040915		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	AT 276211	E	20041015	AT 1999-964597	19991215
	ES 2228152	T3	20050401	ES 1999-964597	19991215
	JP 2000229377	A2	20000822	JP 1999-359292	19991217
PRAI	EP 1998-204311	A	19981218		
	WO 1999-EP10075	W	19991215		

AB The glazed panel carrying a multilayer coating stack comprises in sequence: a glass substrate, a base antireflective layer with barrier film, an infra-red reflecting layer, and a top antireflective layer. At least one of the antireflective layers comprises a mixed nitride layer of Al and ≥ 1 addnl. material X (the atomic ratio X/Al is ≥ 0.05 , preferably 0.45-6, and X is ≥ 1 compds. selected from the Groups 3a, 4a, 5a, 4b, 5b, 6b, 7b, and 8 of the periodic table especially Si, Zr, Hf, Ti, Nb, and B). This provides an advantageous combination of properties: haze 0.2-0.4, luminous transmittance 75-77%, and thermal stability when a glazed panel is bent and/or tempered. In one embodiment, the multilayer coating deposited on a glass substrate 2 mm thick by magnetron sputtering has the following sequential structure: glass substrate, base dielects. nitride 100 Å and ZnAlOx 230 Å, Ag-1 atomic% Pd 100 Å, overlying barrier ZnAl with Al/Zn = 0.03 at.ratio 20 Å, central dielec. ZnAlOx 750 Å, Ag-1 atomic% Pd 100 Å, overlying barrier ZnAl with Al/Zn = 0.03 at.ratio 20 Å, and top dielects. ZnAlOx 230 Å and SiAlxNy 100 Å. This particular glazed panel is intended for incorporation in a laminated displays or vehicle windscreen.

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 6 OF 7 CAPLUS COPYRIGHT 2006 ACS on STN
AN 1995:563218 CAPLUS
DN 122:326013
TI Thin film interference filter coatings and methods of making them
IN Wolfe, Jesse D.; Belkind, Abraham I.; Laird, Ronald E.
PA Boc Group, Inc., USA
SO Eur. Pat. Appl., 20 pp.
CODEN: EPXXDW

DT Patent
LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 622645	A1	19941102	EP 1994-303054	19940427
	EP 622645	B1	19991124		
	R: AT, BE, CH, DE, ES, FR, GB, IT, LI, LU, NL, SE				
	CA 2120875	AA	19941029	CA 1994-2120875	19940408
	CA 2120875	C	19990706		
	AU 9459349	A1	19941103	AU 1994-59349	19940411
	AU 678207	B2	19970522		
	JP 06347640	A2	19941222	JP 1994-88680	19940426
	AT 186991	E	19991215	AT 1994-303054	19940427
	ES 2139050	T3	20000201	ES 1994-303054	19940427

CN 1100812	A	19950329	CN 1994-104654	19940428
US 5563734	A	19961008	US 1994-337686	19941110
PRAI US 1993-54521	A	19930428		

AB Thin film interference filters comprising, in order, a transparent substrate, a first substantially transparent dielec. layer, a first metal precoat layer, a partially reflective metal layer, a second metal precoat layer, and a second substantially transparent dielec. layer, are described in which the first metal precoat layer comprises nickel and chromium or chromium nitride, and the second metal precoat layer comprises nickel and chromium nitride. Methods for producing the films entail sequential deposition of the layers and include the deposition of the second precoat layer by reactive sputtering. Application to the control of sunlight passing through windows is indicated.

L1 ANSWER 7 OF 7 CAPLUS COPYRIGHT 2006 ACS on STN
 AN 1972:146725 CAPLUS
 DN 76:146725
 TI Hafnium nitride thin-film resistor
 IN Gerstenberg, Dieter; Smith, Frank T. J.
 PA Bell Telephone Laboratories, Inc.
 SO U.S., 4 pp. Division of U.S. 3,575,833 (CA 75;12265b).
 CODEN: USXXAM
 DT Patent
 LA English
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	US 3647662	A	19720307	US 1970-41876	19700601
PRAI	US 1970-41876	A	19700601		
AB	A technique for fabricating HfN film resistors involves reactively sputtering Hf in a N ambient on a nonconducting substrate. Resistors fabricated in accordance with the described procedure manifest a wider range of available elec. properties, such as temperature coefficient of resistance and resistivity, than the widely used TaN devices.				

=> s silicon nitride thin film
 767095 SILICON
 226542 NITRIDE
 564035 THIN
 942173 FILM
 L2 202 SILICON NITRIDE THIN FILM
 (SILICON(W)NITRIDE(W)THIN(W)FILM)

=> s l2 and chlorine impurities
 128928 CHLORINE
 196249 IMPURITIES
 63 CHLORINE IMPURITIES
 (CHLORINE(W)IMPURITIES)
 L3 0 L2 AND CHLORINE IMPURITIES

=> s l2 and impurities
 196249 IMPURITIES
 L4 1 L2 AND IMPURITIES

=> d bib abs

L4 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2006 ACS on STN
 AN 1976:53480 CAPLUS
 DN 84:53480
 TI Thin insulating layers analysis with Castaing-Slodzian ion analyzer
 AU Blanchard, B.; Brun, J. C.; Hilleret, N.
 CS Serv. Chim. Anal., Commis. Energ. At., Grenoble, Fr.
 SO Analisis (1975), 3(6), 312-16
 CODEN: ANLSCY; ISSN: 0365-4877
 DT Journal
 LA French
 AB A method is described to overcome the problems of sample surface charge, redeposition phenomena, choice of stds., and mobility of

impurities in the determination of indepth concentration profiles of impurities in thin insulating layers of SiO_2 and Si_3N_4 by using the Castaing-Slodzian ion analyzer. Surface charge was reduced by modifying the sample voltage. Si was used as standard for the anal. of SiO_2 and Si_3N_4 by saturating the sample and standard with O to allow the same rate of ionization for the sample and the standard. The redeposition phenomena was reduced by forming a sufficiently large crater. The mobility of the impurities resulting from surface charge upon ionic bombardment was avoided by bombarding the sample with neutral particles.